

Gas Journal nor *Yanof* disclose “selectively imaging data words representative of said physical phenomena only at three-dimensional locations which intersect said ribbon section and said three-dimensional sampling probe,” the Examiner now relies on *Cline* to supply this limitation found in independent claims 1 and 12. The Examiner suggests that “*Cline* discloses only imaging datawords only at intersecting locations (Column 10, lines 52-68).” Even assuming the Examiner’s understanding of *Cline* to be correct, the Examiner fails to establish a *prima facie* case of obviousness as required under 35 U.S.C. § 103.

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine referenced teachings. MPEP § 706.02(j). Second, there must be a reasonable expectation of success. *Id.* Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. *Id.*

Here, the Examiner devotes no more to his explanation for motivation than to surmise that:

[I]t would have been obvious to a person of ordinary skill in the art to modify the disclosure of *Oil & Gas Journal* with the teachings of *Yanof*. The suggestion/motivation for doing so would have been to exclude unwanted, obscuring structures from the reprojection (*Yanof*, col. 4, lines 13-22) and to display a three-dimensional array of physical values in two-dimensional cross-section taken in a selectable viewing plane (*Cline*, col. 3, [lines] 46-49).

Detailed Action (pp. 3, 7). Careful review of each of the cited references, in its entirety, reveals that none of the references contain any suggestion or motivation for their combination—much

less for the modification of the primary reference (*Oil & Gas Journal*). In fact, the Examiner's proposed modification of the primary reference (*Oil & Gas Journal*) and/or combination of the references would substantially alter the principle operation of the *Oil & Gas Journal* three-dimensional probe. *In re: Ratti*, 270 F 2d. 810, 813 (CCPA 1959) ("If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious."). The *Oil & Gas Journal* reference proclaims, as an important advantage, that the probe enables interpreters to see "big picture and details all at once." Conversely, *Cline* teaches a system for displaying a three-dimensional array of physical values in a two-dimensional cross-section taken in a selectable viewing plane—not a three-dimensional probe. (*Cline*, col. 3, lines 46-49). Modification of the *Oil & Gas Journal* three-dimensional probe to display only a two-dimensional cross-section in a selectable viewing plane would therefore, improperly alter the principle operation of the *Oil & Gas Journal* probe--if not render it inoperable for its intended purpose.

Simply put, the *Oil & Gas Journal* three-dimensional probe and *Cline* two-dimensional viewing plane are at cross purposes. Neither therefore, suggests any motivation to combine with the other and, in fact, teaches away from the suggested combination. *In re: Grasselli*, 713 F 2d. 731, 743 (Fed. Cir. 1983) ("It is improper to combine references where the references teach away from their combination."). Regardless of whether it would have been obvious to a person of ordinary skill in the art to modify *Oil & Gas Journal* with the teachings of *Yanof*, it clearly would not have been obvious to modify the *Oil & Gas Journal* probe in the manner suggested using *Cline*.

The Examiner's reasoning simply does not rise to the level required to establish that obviousness is more probable than not. Claims 1 and 12 are therefore, patentably distinguished from any combination of *Oil & Gas Journal*, *Yanof* and/or *Cline*. Because claims 2-9 and 13-20 ultimately depend from independent claims 1 and 12, respectively, these claims are also patentably distinguished from *Oil & Gas Journal*, *Yanof* and/or *Cline*.

Claims 11 and 22 were also rejected under 35 U.S.C. § 103(a) as being unpatentable over *Oil & Gas Journal* in view of *Yanof*, as applied to claims 1 and 12, and further in view of *Cline*. Because claims 11 and 12 ultimately depend from independent claims 1 and 12, respectively, these claims are also patentably distinguished from *Oil & Gas Journal*, *Yanof* and/or *Cline*.

Section 103(a) Rejections Based Upon *Oil & Gas Journal*, In View of *Yanof*, and Further In View of *Magic Earth Brochure*

Claims 10 and 21 were rejected under 35 U.S.C. § 103(a) as being unpatentable over *Oil & Gas Journal* in view of *Yanof*, as applied to claims 1 and 12, and further in view of *Magic Earth Brochure*. Because claims 10 and 21 ultimately depend from independent claims 1 and 12, respectively, these claims are also patentably distinguished from *Oil & Gas Journal*, *Yanof* and/or *Magic Earth Brochure*.

Section 103(a) Rejections Based Upon *Oil & Gas Journal* In View of WO 00/14574

Claims 23-27, 33-37 and 43 were rejected under 35 U.S.C. § 103(a) as being unpatentable over *Oil & Gas Journal* in view of WO 00/14574. The Examiner relies on WO 00/14574 (pp. 12 (par. 2) – 13 (par. 1) to supply the limitation “interpolating between said

first spline curve and said second spline curve to define a three-dimensional surface representative of said physical phenomenon” found in independent claim 23, and to supply the limitation “interpolating between each of said spline curves to form a surface representative of a physical phenomenon described by said three-dimensional data volume” found in independent claim 34. The cited reference, however, merely reveals a method for interactive well planning, which “can be used either to visualize existing well paths and log information or to design paths for new wells to be drilled.” A well path is defined by a set of node points connected by a spline curve. Conversely, independent claims 23 and 34 require interpolating between two spline curves to form a surface. Neither *WO 00/14574* nor *Oil & Gas Journal* teach this limitation.

Moreover, careful review of each cited reference, in its entirety, reveals that none of the references contain any suggestion or motivation for their combination—much less for the modification of the primary reference (*Oil & Gas Journal*). In fact, the Examiner’s proposed modification of the primary reference (*Oil & Gas Journal*) and/or combination of the references would substantially alter the principal operation of the *Oil & Gas Journal* three-dimensional probe, as explained above in reference to the Examiner’s rejection of claims 1 and 12. For example, the secondary reference (*WO 00/14574*) teaches a method for interactive well planning and display of well paths defined by a set of node points connected by a spline curve—not a three-dimensional probe. Modification of the *Oil & Gas Journal* three-dimensional probe to display only a single spline curve defining a well path would therefore, improperly alter the principal operation of the *Oil & Gas Journal* probe—if not render it inoperable for its intended purpose.

Simply put, the *Oil & Gas Journal* three-dimensional probe and *WO 00/14574* well path are at cross-purposes. Neither therefore, suggests any motivation to combine with the other, and, in fact, teaches away from the suggested combination. The Examiner's reliance on *WO 00/14574* is therefore, misplaced and neither, moreover, supplies the foregoing limitations found in independent claims 23 and 34.

Claims 23 and 34 are therefore, patentably distinguished from any combination of *Oil & Gas Journal* and *WO 00/14574*. Because claims 24-27, 33, and 35-37, 43 ultimately depend from independent claims 23 and 34, respectively, these claims are also patentably distinguished from *Oil & Gas Journal* and *WO 00/14574*.

CONCLUSION

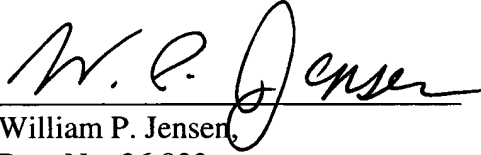
Claims 1-53 are pending in this application. Prompt examination and favorable consideration are requested. Because Applicants have added new claims 44-53 in the Amendment and Response submitted June 30, 2004, and presented arguments in this Supplemental Response pursuant to the Examiner's request, Applicants respectfully request a written response and/or interview prior to any final determination by the Examiner.

The Commissioner is hereby authorized to charge any additional amount required, or credit any overpayment, to Account No. 19-2112. A duplicate copy of this sheet is enclosed.

Respectfully submitted,

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